

Fig. 1

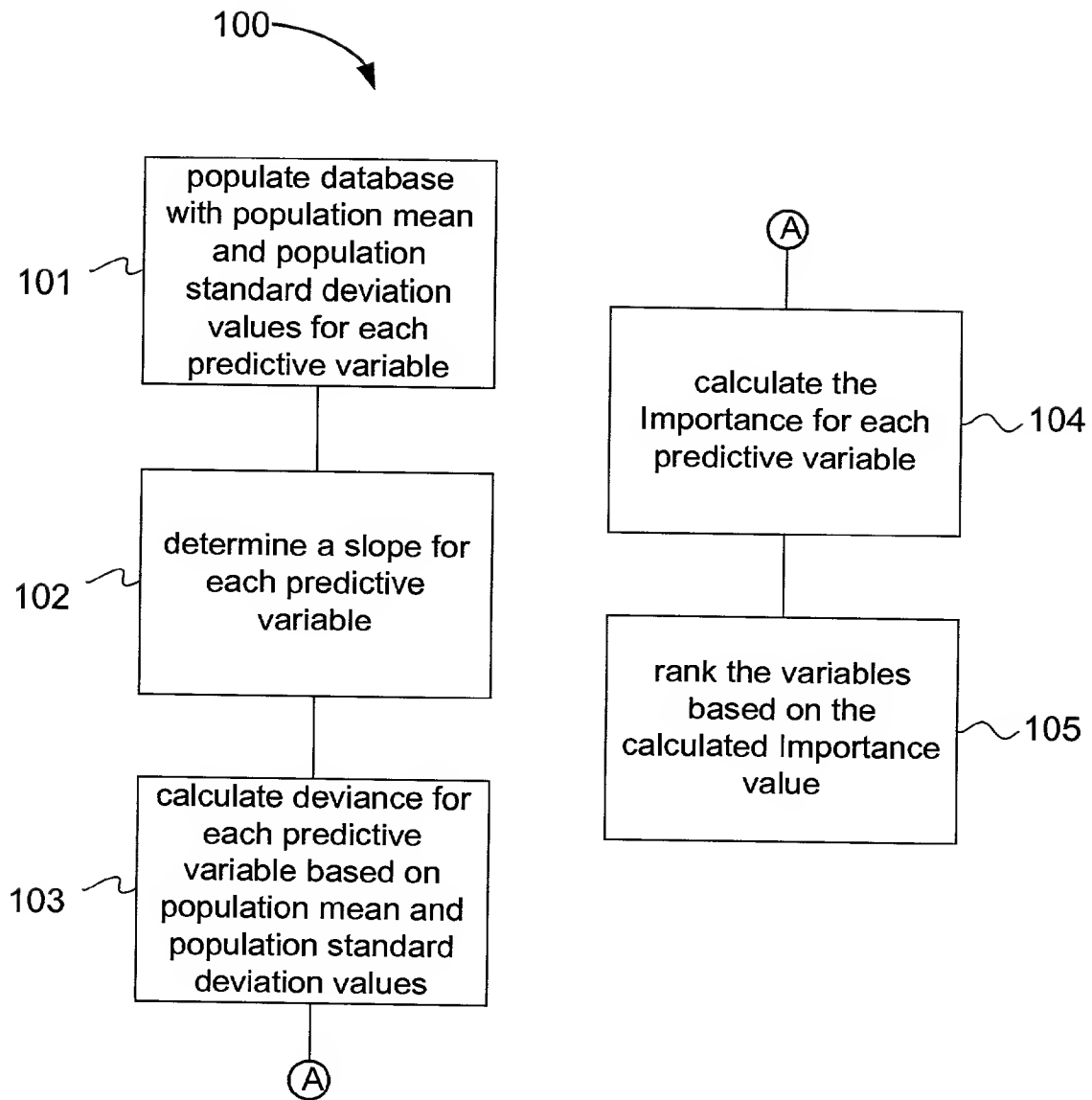


Fig. 2

<u>Variable</u>	<u>Description</u>
X ₁ :	Symbol of the most expensive vehicles on the policy
X ₂ :	Vehicle age of the oldest vehicle on the policy
X ₃ :	Total number of drivers
X ₄ :	Total number of driver safety surcharge points in the past three years
X ₅ :	Total number of minor traffic violations other than speeding on the policy in the past three years
X ₆ :	Total number of no-fault incidences on the policy in the past three years
X ₇ :	Total number of comprehensive loss claims on the policy in the past three years
X ₈ :	Total number of at-fault accidents on the policy in the past three years
X ₉ :	Total number of speeding violations on the policy in the past three years
X ₁₀ :	Total number of major traffic violations other than speeding on the policy in the past three years
X ₁₁ :	Age of the youngest driver on the policy
X ₁₂ :	Total number of vehicles on the policy
X ₁₃ :	Gender of the youngest driver on the policy
X ₁₄ :	Financial credit score of the primary insured on the policy
X ₁₅ :	Bodily injury coverage limit
X ₁₆ :	Comprehensive coverage deductible
X ₁₇ :	Ranking of the average annual number of tornadoes experienced in the insured party's county

Fig. 3

<u>Variable</u>	<u>Assumption</u>	<u>Mean Value</u>	<u>Standard Deviation</u>
Y:	The higher the loss ratio, the worse the profitability.	.54	
X ₁ :	The higher the symbol scale, the more expensive the vehicle.	14.4	5.2
X ₂ :	None	4.9	3.8
X ₃ :	None	1.44	0.65
X ₄ :	The higher the points, the more accident and violation safety points being charged to the policy.	0.97	2.00
X ₅ :	None	0.27	0.61
X ₆ :	None	0.10	0.36
X ₇ :	None	0.07	0.32
X ₈ :	None	0.23	0.55
X ₉ :	None	0.49	0.90
X ₁₀ :	None	0.11	0.40
X ₁₁ :	None	38.7	13.3
X ₁₂ :	None	1.7	0.72
X ₁₃ :	The value is 0 or 1: 0 = female and 1 = male	0.61	0.49
X ₁₄ :	The higher the credit score the worse the credit history	709	245
X ₁₅ :	The value is 0 or 1: 0 = basic limit and 1 = higher than basic limit	0.49	0.76
X ₁₆ :	The value is 0 or 1: 0 = other than \$250 deductible and 1=\$250 deductible	0.58	0.79
X ₁₇ :	The ranking is from 1 to 10. The higher the ranking, the more tornadoes.	5.6	2.7

Fig. 4

1	2	3	4	5	6
Variable	Value (X_i)	Slope	Deviance, ($x - \mu$) / σ	Importance = Slope*Deviance	Rank
X ₁	23	0.0061	1.65	0.0100	#5
X ₂	4	-0.01062	-0.24	0.0025	#8
X ₃	1	0.00593	-0.68	-0.0040	#14
X ₄	10	-0.00334	4.50	-0.0150	#16
X ₅	1	0.01103	1.20	0.0132	#4
X ₆	2	0.07523	5.30	0.3970	#2
X ₇	0	0.04857	-0.22	-0.0106	#15
X ₈	0	0.02741	-0.42	-0.0115	#17
X ₉	1	0.01060	0.57	0.0060	#7
X ₁₀	3	0.06106	7.20	0.4410	#1
X ₁₁	29	-0.00242	-0.73	0.0018	#9
X ₁₂	1	-0.06216	-0.97	0.0604	#3
X ₁₃	1	0.01088	0.80	0.0087	#6
X ₁₄	1261	0.000403	2.30	0.00091	#11
X ₁₅	0	-0.00194	-0.64	0.0013	#10
X ₁₆	1	-0.0017	0.53	-0.00090	#12
X ₁₇	1	0.000704	-1.70	-0.0012	#13

Fig. 5